

**TRANSLATION**

**PATENT COOPERATION TREATY**

**PCT**

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>0261/04/PCT</b>	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. <b>PCT/EP2004/008193</b>	International filing date (day/month/year) <b>22.07.2004</b>	Priority date (day/month/year) <b>22.07.2003</b>
International Patent Classification (IPC) or national classification and IPC <b>G06F3/033</b>		
Applicant <b>BAUHAUS-UNIVERSITÄT WEIMAR</b>		

1.	This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2.	This REPORT consists of a total of <u>7</u> sheets, including this cover sheet.
3.	This report is also accompanied by ANNEXES, comprising: a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>6</u> sheets, as follows: <input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s))  _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4.	This report contains indications relating to the following items: <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language \_\_\_\_\_ which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 2-18 \_\_\_\_\_ as originally filed/furnished
- pages\* 1, 4a \_\_\_\_\_ received by this Authority on 21.05.2005 with letter of 20.05.2005
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the claims:
- nos. \_\_\_\_\_ as originally filed/furnished
- nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19
- nos.\* 1-12 \_\_\_\_\_ received by this Authority on 21.05.2005 with letter of 20.05.2005
- nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the drawings:
- sheets 1-7 \_\_\_\_\_ as originally filed/furnished
- sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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**Box No. V** Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims	2-12	YES
	Claims	1	NO
Inventive step (IS)	Claims		YES
	Claims	1-12	NO
Industrial applicability (IA)	Claims	1-12	YES
	Claims		NO

## 2. Citations and explanations (Rule 70.7)

1. This report makes reference to the following documents:

D1: JP 10 207629 A (TAKAHASHI), 7 August 1998\*\*  
D2: US 5 589 828 A (BRAD A. ARMSTRONG), 31 December 1996\*  
D3: US 5 565 891 A (BRAD A. ARMSTRONG), 15 October 1996\*/\*\*  
D4: US 5 620 371 A (LUCENT TECHNOLOGIES), 15 April 1997\*  
D5: US 2002/0018582 A (ALPS ELECTRIC), 14 February 2002\*

\* documents that reflect the general professional knowledge of a person skilled in the art

\*\* documents cited by the applicant

2. In view of document D3, the subject matter of claim 1 does not meet the requirements of PCT Article 33(2) for novelty.

2.1 Document D3 (see, in particular, column 5, line 23 - column 7, line 62; figures 1-4 and figure 11) describes a data recorder for data processing

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installations for acquiring multidimensional data (movements with three degrees of freedom of translation and three degrees of freedom of rotation; see, for example, column 3, lines 31-49, and figure 11: "six degrees of freedom"; column 5, lines 38-43, in connection with column 7, lines 7-19 and 49-51; and figure 4) generated by applying translational and/or rotational forces (see, for example, columns 32-37: "hand manipulated six degree of freedom trackball controller" in connection with column 7, lines 7-59).

That device comprises a stand (housing 10 which, as shown in figures 8 and 11, for example, is used to stand the data recorder on the work place, and therefore constitutes a stand) and (as directly shown by figure 4, for example; and column 5, lines 28-30: "housing 10 which can at least in part support, retain...carriage 14") a holding element mounted therein (carriage 14, formed by upper member 20, which is movable in track frame 34, which is in turn movable relative to side walls 18) so as to be movable along three mutually perpendicular axes of translation (directly shown by figure 4; see also column 9, line 58 - column 10, line 16).

That device also comprises a control ball (1) rotatable about three rotational axes (directly shown in figures 1-4; see also column 7, lines 11-24, for example) but mounted in a fixed manner in the holding element (directly shown in figure 2,

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for example).

The control ball is mounted in such a way in the holding element that it can be held at two ball segment sections which are at least *partially* diametrically opposed with the thumb and fingers of a hand (namely on the left and right sides of the trackball in its embodiment without a collet 16; see also column 6, lines 36-42: "Collet 16, if utilized,...although when a collet 16 is not utilized...", or column 6, lines 54-58), and to which both translational forces (column 6, lines 54-58: "If a collet is not used, then the exposed portion of trackball 12 is available for grasping with the fingers to apply force in *any* linear direction) and rotational forces (which is the normal use of a trackball; see also the above-mentioned passages) can be applied along all axes by means of the control ball ("six degrees of freedom", as already shown in the above-mentioned passages).

Sensors for detecting the translation of the holding element (see figure 3; column 8, lines 44-54; and column 9, lines 8-10: "down sensor 110, right sensor 118 and left sensor 122") and rotation (column 7, lines 11-18: "three perpendicular encoders - sensors - 124, 126, 128 for sensing rotation...") are provided. The data sensed by the sensors are transmitted via an interface unit to a connected data processing installation (as directly shown by figures 10 and

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11; figure 4; and column 12, lines 38-50).

Document D3 thus contains all the features of independent claim 1 in combination, and its subject matter is not novel.

3. It is also pointed out that even if independent claim 1 contained the feature that the control ball is mounted in such a way in the holding element that it can be grasped from above and below by the fingers of a hand (and not from the right and from the left, as described in the previous paragraph and known from D3) (for which purpose a vertically oriented stand must naturally be provided, with a holder arranged on its top end; see also D1, figure 4), that feature would not contribute to inventive step. This only represents one of two obvious alternatives which permit the application of translational or rotational movements with the fingers of a hand, without grasping, and a person skilled in the art would choose the one or the other alternative, depending on user preferences, without needing to be inventive.
4. Dependent claims 2-12 do not contain any features which, in combination with the features of any claim to which they refer, meet the PCT inventive step requirements.
  - 4.1 The additional features of claims 2 and 6 are also disclosed in D3 (column 8, lines 48-59; figure 4 and associated text in column 9, line 58 to column

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	<p>10, line 21).</p> <p>4.2 The additional feature of claim 3 is known from D1 (figure 4). The feature of claim 4 is disclosed in D3 (figures 2-4: collet 16).</p> <p>4.3 The additional feature of claim 5 relates to a conventional measure used to hold a ball vertically in a mount, and is in addition obvious from D4 (figure 4; column 3, lines 8-19).</p> <p>4.4 The additional feature of claim 7 is a widespread method to reset a data input device to a neutral initial position after it has been actuated (see, for example, D3, column 8, lines 57-62; or D2, figure 2: shaft spring 176). The features of claims 8-10 relate to conventional types of sensors for sensing translation or rotation (see, for example, D5, section 44, or D1, column 3, lines 26-31).</p> <p>4.5 The additional feature of claim 11 designates a well-known method for giving feedback to a user during input (see, for example, D3, column 4, lines 29-35; or D2, figure 2: shaft spring 176). The feature of claim 12 is known from D3 (figure 8, switches 144 and 146).</p> <p>5. For the reasons mentioned in paragraphs 2-4 above, claims 1-12 are not allowable. In view of the available prior art, it is not possible to recognise a basis for a new allowable claim in any part of the application.</p>